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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Mercx

Application No.: 09/966,351

Filed: 9/28/2001

Title: Metallized Polyester Composition

Attorney Docket No.: GEPL.P-061

Group Art Unit: 1773

Examiner: K. Kreuer

Confirmation No: 3890

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Commissioner for Patents

P O Box 1450

Alexandria, VA 22313-1450

APPEAL BRIEF TRANSMITTAL

Dear Sir:

Applicants enclose in triplicate the Brief for Appellant in the above-captioned case. The Commissioner is authorized to charge the fee for the filing of the brief to Deposit Acct. No.07-0862.

Applicants request an extension of time to make this paper timely, along with the appropriate fee.

Respectfully submitted,

Marina T. Larson

Marina T. Larson, Ph.D.

Cert. Under 37 CFR 1.8
This paper and the attachments named herein are being deposited with the United States Postal Service with sufficient postage as first class mail and addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on

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BRIEF FOR APPELLANT

This brief is filed in support of Applicants' Appeal from the final rejection mailed 3/7/2003. Consideration of the application and reversal of the rejections are respectfully urged.

Real Party in Interest

The real party in interest is General Electric Company.

Related Appeals and Interferences

To Applicants' knowledge, there are no related appeals or interferences.

Status of Claims

Claims 1, 3, 4, and 6-11 are pending. Claims 2, 5 and 12 have been canceled. No other claims have been presented.

I hereby certify that this paper and any attachments named herein are being deposited with the US Postal Service as first-class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on November 11, 2003.

Marina T. Larson
Marina T. Larson, PTO Reg. No. 32,038

November 11, 2003
Date of Signature

Status of Amendments

All amendments prior to appeal have been entered. An amendment after appeal is being filed concurrently with this Appeal Brief. As the amendments are entirely formal and raise no new issues, it is anticipated that the amendment will be entered. Claim 6 in the Appendix therefore reflects the claim after entry of this amendment.

Summary of Invention

The present invention relates to metallized molded resin article. One of the problems encountered with metallized molded resin articles is the formation of haze, and rainbow-like blotches on the surface of the article, particularly after exposure to heat. This phenomenon is referred to in the art as "blooming." As defined in claim 1, the molded resin articles of the invention consist essentially of:

- a) 70 to about 99.9 weight percent, based on the total weight of the resin composition, of a crystallizable polyester resin derived from aliphatic or cycloaliphatic diols, or mixtures thereof, containing 2 to 10 carbon atoms and at least one aromatic dicarboxylic acid wherein the aromatic group is a C6 to C20 aryl radical
- b) a non-blooming polymeric release agent/lubricant composed of olefinic monomeric units, wherein said release agent/lubricant is non-blooming when the metallized molded resin article is subject to aging at temperature of 150 -185 degrees Centigrade,
- c) optionally, from 0 to about 20 percent by weight nucleants and/or fillers,
- d) less than 5% by weight additional ingredients based on the total weight of the resin composition, and
- (e) a metallizing layer disposed on a portion of the surface of said article.

Examples of the polymeric release agent/lubricant are listed in claim 3 as polyethylene, poly-ethylene vinyl acetate (EVA), poly-ethylene ethyl acrylate (EEA) and mixtures thereof.

The molded articles of the invention have an excellent surface for the metallizing layer and develop no or negligible haze and rainbow effects when the metallized article is

exposed to heat aging at a temperature of 150-185°C. This benefit results because the release agent does not migrate through the metallized layer. The invention thus provides a benefit over metallized articles containing typical release agents such as pentaerythritol, which do migrate through the metallized layer at these temperatures to result in a rainbow and haze effect.

Issues on Appeal

- (1) Whether the claims are indefinite as a result of the use of the term "non-blooming?"
- (2) Whether the claims are obvious and therefore unpatentable under 35 USC § 103 in view of the art cited by the Examiner?

Grouping of Claims

With respect to the §112 rejection, claims 1 and 6-11 are argued as a first group. Claims 3 and 4 are argued as a second group. The groups do not stand or fall together.

Claims 1, 3-7 and 9-11 are argued as a first group with respect to the § 103 rejection and stand or fall together. Claim 8 should be considered as a separate group to the extent that reversal of the rejections based on Breitenfellner would leave no art rejection outstanding with respect to claim 8, even if the rejection based on Polyplastics were affirmed.

Argument

I. The Claims Are Not Indefinite

Claims 1, 3, 4, and 6-11 stand rejected under 35 USC § 112, second paragraph, as indefinite. In making this rejection, the Examiner has focused on the single word "non-blooming" rather than on the claim as whole, although the rationale for the rejection appears to have changed.

In the Official Action of March 7, 2003, the Examiner stated:

The term "non-blooming" is indefinite. Specifically, it is not clear from the specification under what condition one would determine whether a lubricant is "non-blooming." It is also unclear how one would determine when a lubricant is "blooming" or "non-blooming." If Applicant's contention is that a lubricant is non-blooming when the metallized article is subject to aging at temperature of 150-185 centigrade, then claim 2 fails to further limit claim 1.

This was a simple repeat of the prior rejection, and Applicant's had understood, that the Examiner's issue was the limiting conditions under which the lubricant needed to be non-blooming. Therefore, in response, Applicants pointed out that prior to this rejection, claim 2 had already been cancelled, and the limitation incorporated into claim 1, and that this was believed to overcome the rejection.

In the Advisory Action, the Examiner offered up an entirely new argument, stating that the reference to claim 2 was erroneous. He now states that what the rejection really means is that

the term "non-blooming" is indefinite because there is no description in the specification on how one of ordinary skill in the art would determine whether a lubricant was non-blooming. Furthermore, the term "non-blooming" does not have an art accepted definition.

This after the fact explanation of the rejection is factually inconsistent with the prior rejection during which the Examiner had no difficulty understanding the meaning of the term. Furthermore, it does not establish that the claim, as a whole, is indefinite.

In order to support a rejection under 35 USC § 112, the Examiner has the burden of showing that a person skilled in the art would be unable to understand the scope of the claim when read in the light of the specification. *Ex parte Cordova*, 10 U.S.P.Q. 2d 1949 (POBAI 1989). Here, claim 1 expressly state that the release/agent lubricant is one that is "non-blooming when the metallized article is subject to again at temperature of 150-185 degrees centigrade." Thus, the standard for non-blooming is plainly set forth in the independent claim, and the Examiner's assertion that one skilled in the art would not know how to determine whether a material was non-blooming, and therefore within the scope of the claims is plainly in error.

The application further makes it clear, for example at Page 3, lines 19-20, that the non-blooming mold release agent is one that does not migrate through the metallized layers at these temperatures. Thus, the claim as a whole is not indefinite and the rejection should be reversed.

Furthermore, the Examiner has not explained why the rejection is made with respect to claims 3 and 4. These claims specifically identify the chemical nature of the release/agent lubricant. Thus, as to these claims, the phrase non-blooming is substantially just a continuing label. There is no reason presented why a person skilled in the art would have any difficulty knowing if a composition contained polyethylene (as recited in claim 4) as a release agent/lubricant. Thus, the Examiner has not established that claims 3 and 4 are indefinite for this additional reason.

II. The Claimed Invention Would Not Have Been Obvious

The pending claims are also rejected under 35 USC § 103 as obvious over the any of four combinations of references. Applicants submit that each of these rejections is in error, and that all of the rejections should be withdrawn. Claim 8, however is only subject to two of these rejections, and therefore should be treated separately from the other claims depending on the primary reference relied upon.

In considering a rejection under 35 USC § 103, it should be remembered that “obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination.” *Carella v. Starlight Archery and Pro Line Co.*, 804 F.2d 135, 140, 231 USPQ 644, 647 (Fed. Cir. 1986) (citing *ACS Hosp. Syss., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984)). “[T]he factual inquiry whether to combine references must be thorough and searching.” *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001). This factual question cannot “be resolved on subjective belief and unknown authority,” *In re Lee*, 277 F.3d 1338, 1343-44, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002); “it must be based on objective evidence of record.” *Id.* at 1343, 61 USPQ2d at 1434.

In the rejections on appeal, the Examiner in each case combines one reference that refers to a metallized article with a base resin of a polyalkylene terephthalate, but which lacks a teaching of the specific composition as claimed for use in a metallized article, and a secondary reference which teaches a composition of a polyalkylene terephthalate and a polyolefin mold release agent for use in non-metallized articles. The Examiner asserts in each case that the use of the mold release containing composition of the secondary reference in the metallized articles of the first reference would have been obvious. This assertion is made although no teachings exists in the references pointing to such a substitution.

The first combination of references cited by the Examiner against claims 1, 3, 4, 5 and 6-11 is US Patent No. 4,623,562 of Breitenfellner et al, in view of US Patent No. 4,185,047 of Cohen. Breitenfellner discusses the production of a light-reflecting article, such as a headlight. The specific compositions of Breitenfellner do not include mold release agents. Indeed, Breitenfellner discloses articles in which the resin is 90-60% by weight of a polyalkylene terephthalate and/or copolyester thereof, or of a mixture of polyalkylene terephthalates, and 10-40% by weight of a finely-divided filler. Breitenfellner does, however, mention mold release agents among a list of customary additives that can be included. (Col. 3, lines 26-32)

The Examiner cites Cohen for a teaching of a composition similar to that recited in the present claims, and says that use of this composition in place of the terephthalate composition of Breitenfellner would have been obvious. The Examiner states that this substitution would have been obvious because the Cohen compositions "have improved mold release properties and surface appearance." (Office Action of 7/31/2002, Page 6) Actually, the Cohen patent supports an improvement in mold release properties, and does not indicate any change in surface properties, stating only that the compositions with the mold release have "good surface properties."

In addition to the references, the properties of the resulting combination, as claimed, must be considered to see if the actual invention, with all its associated properties would have been anticipated. Where the claimed invention has an unexpected property, this is evidence of the non-obviousness of the combination. Evidence of the unexpected properties can be found

in the examples of the specification and must be taken into account when determining if a *prima facie* case of obviousness exists. *In re Margolis*, 228 U.S.P.Q. 940, 942 (Fed. Cir. 1986).

In the present case, as reflected in the test results in the application, the inventors unexpectedly found that the articles as claimed do not suffer from the defect of blooming. This result is highly beneficial in applications such as head lamps which can get quite hot when in use and whose performance would be reduced if blooming occurred at elevated temperatures. Further, this result is in no way predictable from the cited Breitenfellner and Cohen references. Breitenfellner says nothing about blooming as a problem in the metallized articles being produced. Cohen says nothing about metallization, and therefore manifestly cannot teach or suggest anything about the properties of a metallized article.

In the advisory action dated September 5, 2003, the Examiner cites US Patent No. 4,283,314, a patent not previously mentioned and one not of record in this case, as support for this position that higher molecular weight release agents exhibit less blooming than lower molecular weight release agents. This patent, if formally included as part of the rejection, is merely a patent plucked from the body of art to prove a point without consideration of whether it is connected in any way to the other references or the claimed invention. The base resin (polyvinyl chloride) is different from both the invention and the cited art, the lubricant is different from the invention and the cited art, and the statement in the '314 patent says nothing about blooming at elevated temperatures. Thus, it is make-weight to support the argument, and not a valid indicator of the state of the relevant art.

Furthermore, in the advisory action dated September 5, 2003 the Examiner asserts that the unexpected property that the metallized articles of the application are non-blooming at the indicated temperature is not relevant, citing *In re Best* for the holding that "claiming a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable." 195 USPQ 430, 433 (CCPA 1977). *Best*, however, is an anticipation case, not an obviousness case, and this holding cannot be extended to the obviousness arena. A property which existed in a known composition, but was not appreciated

before, cannot generally be a basis for patenting the composition a second time. However, where a modification and/or combination of references is required, this argument is inapposite.

Thus, the rejection of the claims under 35 USC § 103 over Breitenfellner in view of Cohen should be withdrawn.

Claims 1, 3, 4, 6, 7 and 9-11 are also rejected as obvious over the combination of Breitenfellner and US Patent No. 4,699,942 of Weaver. This rejection suffers from the same basic defects as the previously discussed rejection. The Examiner says that using the composition of Weaver in the articles of Breitenfellner would have been obvious "because said compositions have improved properties and stampability", but has not related these properties to anything that would be desired in the Breitenfellner articles. Furthermore, the improvements in Weaver stem from a specific combination of nucleating agents, mold release agents, carbon black and antioxidants which are said to give rise to the improvement (Col. 2, lines 21-26), yet the Examiner seems to be taking selected components from this combination to arrive at the rejection. Thus, this rejection should be reversed for the same reasons as discussed above.

Claims 1, 3, 4, 6, 7 and 9-11 are rejected as obvious over JP 20000355509A (referred to as Polyplastics) in view of either Cohen or Weaver as discussed above. Polyplastics is an English language abstract that describes a reflective article made from a polybutylene terephthalate resin. Thus, while it has less disclosure than Breitenfellner, it is substantially cumulative since it too teaches a reflective article formed by metallizing a polyalkylene terephthalate resin. The point of the invention in Polyplastics as reflected in the abstract is the particular resin formulation in order to achieve certain desirable properties relating to adhesion and heat resistance. The Examiner thus is apparently arguing that it would have been obvious to modify the teaching of Polyplastics, by discarding the characteristic feature that is said to make the composition superior, and replacing this with a polymer system from one of two references that have no apparent relevance to light reflective articles. The Examiner has not explained why this combination would be obvious. Further, the defects noted in the rejections based on Breitenfellner are fully applicable to this rejection as well.

For the foregoing reasons, Applicants submit that the rejections of the claims under 35 USC § 103 are in error. Reversal of these rejections is therefore urged.

Respectfully submitted,

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APPENDIX
CLAIMS ON APPEAL

1. A metallized molded resin article, consisting essentially of
 - a) 70 to about 99.9 weight percent, based on the total weight of the resin composition, of a crystallizable polyester resin derived from aliphatic or cycloaliphatic diols, or mixtures thereof, containing 2 to 10 carbon atoms and at least one aromatic dicarboxylic acid wherein the aromatic group is a C6 to C20 aryl radical
 - b) a non-blooming polymeric release agent/lubricant composed of olefinic monomeric units, wherein said release agent/lubricant is non-blooming when the metallized molded resin article is subject to aging at temperature of 150 -185 degrees Centigrade,
 - c) optionally, from 0 to about 20 percent by weight nucleants and/or fillers,
 - d) less than 5% by weight additional ingredients based on the total weight of the resin composition, and
 - e) a metallizing layer disposed on a portion of the surface of said article.
3. A metallized molded resin article according to claim 1 wherein said mold release agent/lubricant is selected from the group consisting of polyethylene, poly-ethylene vinyl acetate (EVA), poly-ethylene ethyl acrylate (EEA) and mixtures thereof.
4. A metallized molded resin article according to claim 1 wherein the release agent/lubricant is polyethylene.
6. A metallized molded resin article according to claim 1 wherein the release agent/lubricant is present in an amount of from 0.3 to 2 percent by weight based on the total weight based on the total weight of the resin component of the article.
7. A metallized molded resin article according to claim 1 wherein the metallization is carried out under a vacuum.
8. A metallized molded resin article according to claim 6 wherein the metallizing layer of the metallized article comprises aluminum.
9. A metallized molded resin according to claim 7 wherein the metallized article comprises a reflective vehicle lamp part.
10. A metallized molded resin article according to claim 1 wherein the crystallizable polyester resin component is selected from the group consisting of poly(ethylene terephthalate), poly(1,4-butylene terephthalate), pol(ethylene naphthanoate), poly(butylene naphthanoate), poly(cyclohexanedimethanol terephthalate) and (poly propylene terephthalate) and mixtures thereof.

11. A metallized molded resin article according to claim 1 wherein the crystallizable polyester resin component is poly(1,4-butylene terephthalate).